

Claim Rejections:

Differences Between The Cited References And The Claimed Invention:

Whiting discusses an apparatus and method for converting an input data character stream into a variable length encoded data stream in a data compression system (Whiting, Abstract).

Okada discusses a compressing apparatus that separates a data string inputted from source data of a Unicode in which different languages mixedly exist into a language string of each language and, after that, compresses the data string every language string (Okada, Abstract).

In contrast, claims 1 and 14 of the subject application (as amended herein) recite "separating the identified tag from the character train stream ... arranging a tag code for identification to a position of the character train stream in which the identified tag was separated ... coding the character train stream including the tag code ... and outputting a code stream."

Claim 10 of the subject application (as amended herein) recites "separating the tag information and the code data from the code stream ... storing the tag information ... reconstructing the character train data including the character train and the tag code from the code data ... replacing the tag code by the tag information."

An embodiment of the present invention shortens a time to retrieve or read a document and minimizes an increase in capacity of a memory or disk with respect to compression data of a structured document including tag information. The tag information and the text (character train) in the character train stream of the structured document including the tags are separated and at least the text is encoded, thereby realizing a high compression ratio. By retrieving the separated tag information, the retrieval can be performed at high speed. For example, the tag information separated from the text in the compression data file is retrieved and when the coincident tag information can be retrieved, the data is skipped by the data of only the number of data up to the tag information at which the tag code in a reconstructed text has been retrieved, thereby enabling easy access to the head of the target document. In order to identify, the tag code is arranged in the position in the character train stream from which the identified tag was separated.

In rejecting claims 1 and 14, the Examiner stated that Whiting discloses "arranging a tag code for identification to a position of the character train stream in which the tag was separated,"

citing col. 7, lines 33-36 and Fig. 5A (regarding claim 1) and col. 21, lines 44-47 (regarding claim 14) of Whiting. However, in Whiting, upon encoding, a "0" tag bit is added to the raw (uncompressed) data, and a "1" tag bit is added to the compressed data (Whiting, col. 8, lines 60-66).

Conversely, according to claims 1 and 14, the tag expressing the document structure is extracted from the character train stream and the tag code showing that the tag existed there is arranged. In other words, claims 1 and 14 relate to the replacement of the tag, and the separation of the tag and the arrangement of the tag code have an inseparable relation, such that claims 1 and 14 fundamentally differ from the mere addition of the tag bit in Whiting. Therefore, the replacement of the tag and the tag code recited in claims 1 and 14 are not disclosed or suggested in Whiting, contrary to the suggestion of the Examiner.

Further, in rejecting claim 1, the Examiner stated that Whiting does not teach a tag information separating unit for "separating the identified tag from said character train stream and outputting as tag information," and cited col. 8, lines 2-4 of Okada as teaching the same. However, in rejecting claim 14, the Examiner stated that Whiting teaches a tag information separating step of "separating the identified tag from said character train stream and outputting as tag information," citing col. 21, lines 40-43 of Whiting. Despite the discrepancy in the Examiner's position, Whiting does not disclose separating the identified tag from the character train stream, but merely discusses parsing a variable length encoded data stream into separate portions, each separate portion starting with one of the tags (Whiting, col. 21, lines 40-43), and the code separation in Okada relates to a process in the reconstructing operation of the compression data.

Conversely, because the tag information separation in claims 1 and 14 relate to a process in the compressing operation of the data, the recitations of claims 1 and 14 fundamentally differ from that which is discussed in Okada and Whiting. Common sense indicates that the opposite operations are executed in the compression as in the reconstruction, and it is fundamentally impossible to apply the reconstructing operation to the compression operation. The separation of the information in the reconstructing operation of Okada denotes that the information is contrarily combined in the compression operation.

However, the separation of the tag information of claims 1 and 14 occurs in the compression operation and is absolutely inseparable from the replacement of the tag code that is subsequently executed. Okada does not disclose or suggest the fundamental mechanism

such that the tag information is separated or that the tag code is arranged there. Okada relates to the mere separation of a plurality of kinds of information and the separation is performed on the reconstructing side. Even if such a disclosure of Okada is combined with the compressing operation of Whiting (see argument thereto below), the recitations of claims 1 and 14 cannot be predicted. Therefore, claims 1 and 14 are patentably distinguishable over the cited references, taken alone or in combination.

Because claims 1 and 14 (relating to compression) are patentably distinguishable over the cited references, naturally claim 10 (relating to reconstruction) is also patentably distinguishable over the cited references.

In addition, dependent claims 2-9 and 11-13 of the subject application are allowable in part based on their dependency, directly or indirectly, from one of claims 1 and 10.

Lack Of Sufficient Motivation To Combine The References:

MPEP § 706.02(j) sets forth the contents of a rejection under § 103: "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure" (emphasis in original).

MPEP § 2142 states that "[w]hen the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the examiner to explain why the combination of the teachings is proper." The Examiner is required to present actual evidence and make particular findings related to the motivation to combine the teachings of the references. In re Kotzab, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); In re Dembiczak, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence." Dembiczak, 50 USPQ2d at 1617. "The factual inquiry whether to combine the references must be thorough and searching." In re Lee, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002) (citing McGinley v. Franklin Sports, Inc., 60 USPQ2d

1001, 1008 (Fed. Cir. 2001)). The factual inquiry must be based on objective evidence of record, and cannot be based on subjective belief and unknown authority. Id. at 1433-34. The Examiner must explain the reasons that one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious. In re Rouffet, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998).

The Examiner has not presented any evidence why Whiting, Okada, and Aoyama would have been combined. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. MPEP § 2143.01. Specifically, there must be a suggestion or motivation in the references to make the combination or modification. Id. The Examiner's sole support for such a combination is: (1) that tagging contains information about a file, or other structure of the file; therefore, different components or units must be able to read and access the tagged information in order to know where these files are located (in regard to claim 1), (2) that a reconstructing unit would be necessary to reconstruct the data after the data was tagged and separated from the main information (in regard to claim 10), and (3) that different units are needed in order to code the text, tag the information, and compress and decompress the data (in regard to claim 14). The Examiner cannot rely on the benefit of the combination without first supporting the motivation to make the combination. Such motivation does not appear anywhere in any of the references, and the Examiner has not presented any actual evidence in support of the same. Instead, the Examiner relies on broad conclusory statements, subjective belief, and unknown authority. Such a basis does not adequately support the combination of references; therefore, the combination is improper and must be withdrawn.

New Claims:

New claims 15 and 16 are added herein. Support for new claims 15 and 16 may be found in the Specification at page 18, line 14 to page 20, line 9.

Claim 15 recites "separating the discriminated tags from the character train stream; transmitting the separated discriminated tags as a tag information stream; arranging a predetermined tag code at a tag position of the character train stream from which the discriminated tags have been separated; encoding the character train stream that includes the predetermined tag code; and transmitting the encoded character train stream."

Claim 16 recites "comparing the character train stream with a tag identification rule; and

switching between outputting the tag information stream and the encoded character train stream."

The cited references, taken alone or in combination, to not disclose or suggest the same.


Withdrawal of the foregoing rejections is respectfully requested.

There being no further objections or rejections, it is submitted that the application is in condition for allowance, which action is courteously requested. Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters. If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please AMEND claims 1, 10, and 14. The remaining claims are reprinted, as a convenience to the Examiner, as they presently stand before the U.S. Patent and Trademark Office.

1. (ONCE AMENDED) A data compressing apparatus [for] generating code data from a character train stream constructed by a structured document including tags as identification information for expressing a document structure, comprising:

a tag information separating unit [for] separating the identified tag from [said] the character train stream and outputting as tag information;

a tag code replacing unit [for] arranging a tag code for identification to a position of the character train stream in which the identified tag was separated by [said] the tag information separating unit; and

a character train coding unit [for] coding the character train stream including the tag code outputted from [said] the tag code replacing unit and outputting a code stream.

2. (UNAMENDED) An apparatus according to claim 1, wherein said tag code replacing unit arranges a predetermined fixed code as said tag code to the position of the character train stream in which the tag was separated.

3. (UNAMENDED) An apparatus according to claim 1, wherein said tag code replacing unit arranges a tag code indicative of an appearing order of the tag separated by said tag information separating unit to the position of the character train stream in which the tag was separated.

4. (UNAMENDED) An apparatus according to claim 1, further comprising:
a tag information storing unit for storing the tag information separated by said tag information separating unit;
a code storing unit for storing the code data formed by said character train coding unit;
and
a code switching unit for selecting the tag information stored in said tag information storing unit and the code data stored in said code storing unit and outputting the selected tag

information or code data.

5. (UNAMENDED) An apparatus according to claim 1, wherein said character train coding unit comprises:

a dictionary storing unit for storing a dictionary in which a character train serving as a processing unit when compressing has been registered; and

a character train comparing unit for comparing a partial character train in the character train stream from said tag code replacing unit with the registration character train in said dictionary storing unit, thereby detecting a partial character train which coincides with said registration character train, allocating a predetermined code every said detected partial character train, and outputting a resultant character train.

6. (UNAMENDED) An apparatus according to claim 1, further comprising a tag information compressing unit for compressing the tag information separated by said tag information separating unit.

7. (UNAMENDED) An apparatus according to claim 1, further comprising:
a tag dictionary storing unit for storing a dictionary in which a tag character train in the tag information serving as a processing unit when compressing has been registered;
and

a tag character train comparing unit for comparing the partial character train of the character train stream included in the tag information separated by

said tag information separating unit with the registration character train in said tag dictionary storing unit, thereby detecting a partial character train which coincides with said registration character train, allocating a predetermined code every said detected partial character train, and outputting a resultant character train.

8. (UNAMENDED) An apparatus according to claim 4, further comprising a tag position detecting unit for detecting a position of the tag in the code data formed by said character train coding unit,

and wherein both the tag information separated by

said tag information separating unit and designation information of the tag position detected by said tag position detecting unit are stored in said tag information storing unit.

9. (UNAMENDED) An apparatus according to claim 8, wherein said tag position detecting unit detects the code amount from the head of a document or a specific tag and stores it together with the tag information into said tag information storing unit.

10. (ONCE AMENDED) A data reconstructing apparatus [for] reconstructing character train data from a code stream including tag information separated from a character train stream of a structured document including tags as identification information for expressing a document structure and code data obtained by encoding a character train stream in which a tag code has been arranged at a position of the separated tag, comprising:

a tag information separating unit [for] separating [said] the tag information and [said] the code data from [said] the code stream;

a tag information storing unit [for] storing the tag information separated by [said] the tag information separating unit; and

a character train reconstructing unit [for] reconstructing the character train data including the character train and the tag code from [said] the code data and, thereafter, replacing [said] the tag code by the tag information in [said] the tag information storing unit.

11. (UNAMENDED) An apparatus according to claim 10, wherein said character train reconstructing unit comprises:

a dictionary storing unit for storing a dictionary in which a reconstruction character train corresponding to a code of the character train serving as a processing unit when reconstructing has been registered;

a character train comparing unit for separating a code of the character train serving as a reconstruction unit from said code stream and reconstructing the original character train with reference to said dictionary storing unit; and

a character train replacing unit for replacing the tag code reconstructed by said character train comparing unit by the tag information in said tag information storing unit.

12. (UNAMENDED) An apparatus according to claim 10, further comprising a tag information reconstructing unit for reconstructing compression data of the tag information stored in said tag information storing unit.

13. (UNAMENDED) An apparatus according to claim 10, further comprising:
a tag dictionary storing unit for storing a dictionary in which a reconstruction character train corresponding to a code of a tag character train serving as a processing unit when reconstructing has been registered; and
a tag character train comparing unit for separating a code of the tag character train serving as a reconstruction unit from the tag information separated by said tag information separating unit and reconstructing the original tag character train with reference to said dictionary storing unit.

14. (ONCE AMENDED) A data compressing method of generating code data from a character train stream constructed by a structured document including tags as identification information for expressing a document structure, comprising:

[a tag information separating step of] separating the identified tag from [said] the character train stream and outputting as tag information;

[a tag code replacing step of] arranging a tag code for identification to a position of the character train stream in which the identified tag was separated [in said tag information separating step]; and

[a character train coding step of] coding the character train stream including the tag code [outputted from said tag code replacing step] and outputting a code stream.

Please add the following new claims:

15. (NEW) A method, comprising:
receiving a character train stream;
discriminating tags in the character train stream;
separating the discriminated tags from the character train stream;
transmitting the separated discriminated tags as a tag information stream;
arranging a predetermined tag code at a tag position of the character train stream from which the discriminated tags have been separated;

encoding the character train stream that includes the predetermined tag code; and
transmitting the encoded character train stream.

16. (NEW) The method of claim 15, further comprising:
comparing the character train stream with a tag identification rule; and
switching between outputting the tag information stream and the encoded character train
stream.